

## AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions of claims in the application.

### Listing of Claims

1. (withdrawn) A process for producing an [n-5]-hydroxy fatty acid (n is an even number of 10 or more) wherein the [n-6]-position is a single bond, which comprises causing cells or a culture of a microorganism having the activity to introduce hydroxy into the [n-5]-position and hydrogen into the [n-6]-position of a straight—chain fatty acid having n carbon atoms wherein at least the [n-6]-position is a double bond to make the [n-6]-position a single bond (hereinafter referred to as the first microorganism) or a treated matter thereof to act on a straight-chain fatty acid having n carbon atoms wherein at least the [n-6]-position is a double bond or a composition containing the fatty acid to form the [n-5]-hydroxy fatty acid wherein the [n-6]-position is a single bond, and recovering the formed [n-5]-hydroxy fatty acid wherein the [n-6 ]-position is a single bond.
2. (withdrawn) The process according to claim 1, wherein the double bond at the [n-6]-position is the cis-form.
3. (withdrawn) The process according to claim 1, wherein the first microorganism has the activity to introduce hydroxy into the 13-position and hydrogen into the 12-position of linoleic acid,  $\alpha$ -linolenic acid or  $\gamma$ -linolenic acid to make the 12-position a single bond.
4. (withdrawn) The process according to claim 1, wherein the first

microorganism is a lactic acid bacterium or bifidobacterium.

5. (withdrawn) The process according to claim 1, wherein the first microorganism belongs to the genus *Pediococcus* or *Bifidobacterium*.

6. (withdrawn) The process according to claim 1, wherein the first microorganism is *Pediococcus pentosaceus* or *Bifidobacterium bifidum*.

7. (withdrawn) The process according to claim 1, wherein the first microorganism is *Pediococcus pentosaceus* IFO3891, *Pediococcus* sp. IFO3778 or *Bifidobacterium bifidum* JCM7002.

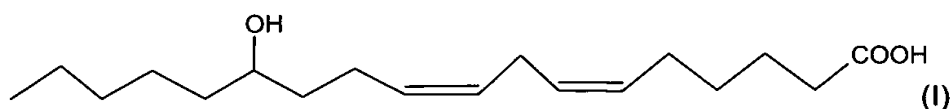
8. (withdrawn) The process according to claim 1, wherein the straight-chain fatty acid having n carbon atoms (n is an even number of 10 or more) wherein at least the [n-6]-position is a double bond is linoleic acid and the [n-5]-hydroxy fatty acid wherein the [n-6]-position is a single bond is 13-hydroxy-9-octadecenoic acid.

9. (withdrawn) The process according to claim 1, wherein the straight-chain fatty acid having n carbon atoms (n is an even number of 10 or more) wherein at least the [n-6]-position is a double bond is  $\alpha$ -linoleic acid and the [n-5]-hydroxy fatty acid wherein the [n-6]-position is a single bond is 13-hydroxy-9,15-octadecadienoic acid.

10. (withdrawn) The process according to claim 1, wherein the straight-chain

fatty acid having n carbon atoms (n is an even number of 10 or more) wherein at least the [n-6]-position is a double bond is  $\gamma$ -linoleic acid and the [n-5]-hydroxy fatty acid wherein the [n-6]-position is a single bond is 13-hydroxy-6,9-octadecadienoic acid.

11. (withdrawn) 13-Hydroxy-6,9-octadecadienoic acid represented by the following formula (I):



12. (currently amended) A process for producing  ~~$\delta$ -lactone~~  $\delta$ -decalone, which comprises the steps of:

(i) causing cells or a culture of ~~the first microorganism~~ a microorganism having the activity to convert linoleic acid to 13-hydroxy-9-octadecenoic acid and belonging to the genus *Pediococcus* or *Bifidobacterium*, or a treated matter thereof to act on a ~~straight chain fatty acid having n carbon atoms (n is an even number of 10 or more) wherein at least the [n-6] position is a double bond~~ linoleic acid or a composition containing the fatty acid linoleic acid to form an [n-5]-hydroxy fatty acid wherein the [n-6]-position is a single bond, 13-hydroxy-9-octadecenoic acid; and

(ii) causing cells or a culture of a microorganism having the activity to  $\beta$ -oxidize an [n-5]-hydroxy fatty acid wherein the [n-6]-position is a single bond (hereinafter referred to as the second microorganism) 13-hydroxy-9-octadecenoic acid and belonging to the genus *Kluyveromyces*, *Zygosaccharomyces*, *Pichia*, or *Saccharomyces*, or a treated matter thereof to act on the formed [n-5]-hydroxy fatty

acid, 13-hydroxy-9-octadecenoic acid to form  $\delta$ -decalactone; and

(iii) recovering the formed  $\delta$ -lactone  $\delta$ -decalactone.

13 - 18. (canceled)

19. (Currently amended) The process according to claim 12, wherein the first microorganism in step (i) is *Pediococcus pentosaceus* or ~~*Bifidobacterium bifidum*~~.

20. (Currently amended) The process according to claim 12, wherein the first microorganism in step (i) is *Pediococcus pentosaceus* IFO3891, ~~*Pediococcus* sp. IFO3778 or *Bifidobacterium bifidum* JCM7002~~.

21. (Currently amended) The process according to claim 12, wherein the second microorganism in step (i) is a yeast *Bifidobacterium bifidum*.

22. (Currently amended) The process according to claim 12, wherein the second microorganism in step (i) belongs to the genus ~~*Kluyveromyces*~~, ~~*Zygosaccharomyces*~~, ~~*Pichia*~~ or ~~*Saccharomyces*~~ is *Bifidobacterium bifidum* JCM7002.

23. (Currently amended) The process according to claim 12, wherein the second microorganism in step (ii) is *Kluyveromyces marxianus*, *Kluyveromyces thermotolerans*, *Kluyveromyces wickerhamii*, *Zygosaccharomyces rouxii*, *Zygosaccharomyces bailii*, *Zygosaccharomyces cidri*, *Pichia jadinii* or

*Saccharomyces cerevisiae*.

24. (Currently amended) The process according to claim 12, wherein the ~~second~~ microorganism in step (ii) is *Kluyveromyces marxianus* IFO1090, *Kluyveromyces thermotolerans* ATCC24177, *Kluyveromyces wickerhamii* ATCC24178, *Zygosaccharomyces rouxii* NFR2007, *Zygosaccharomyces bailii* ATCC8766, *Zygosaccharomyces cidri* ATCC46819, *Pichia jadinii* IFO0987 or *Saccharomyces cerevisiae* Kyokai No. 701.

25 - 45. (canceled)

46. (Withdrawn) The process according to claim 2, wherein the first microorganism has the activity to introduce hydroxy into the 13-position and hydrogen into the 12-position of linoleic acid,  $\alpha$ -linolenic acid or  $\gamma$ -linolenic acid to make the 12-position a single bond.

47. (Withdrawn) The process according to claim 46, wherein the first microorganism is a lactic acid bacterium or bifidobacterium.

48. (Withdrawn) The process according to claim 46, wherein the first microorganism belongs to the genus *Pediococcus* or *Bifidobacterium*.

49. (Withdrawn) The process according to claim 46, wherein the first

microorganism is *Pediococcus pentosaceus* or *Bifidobacterium bifidum*.

50. (Withdrawn) The process according to claim 46, wherein the first microorganism is *Pediococcus pentosaceus* IFO3891, *Pediococcus* sp. IFO3778 or *Bifidobacterium bifidum* JCM7002.

51. (Withdrawn) The process according to claim 50, wherein the straight-chain fatty acid having n carbon atoms (n is an even number of 10 or more) wherein at least the [n-6]-position is a double bond is linoleic acid and the [n-5]-hydroxy fatty acid wherein the [n-6]-position is a single bond is 13-hydroxy-9-octadecenoic acid.

52. (Withdrawn) The process according to claim 50, wherein the straight-chain fatty acid having n carbon atoms (n is an even number of 10 or more) wherein at least the [n-6]-position is a double bond is  $\alpha$ -linoleic acid and the [n-5]-hydroxy fatty acid wherein the [n-6]-position is a single bond is 13-hydroxy-9,15-octadecadienoic acid.

53. (Withdrawn) The process according to claim 50, wherein the straight-chain fatty acid having n carbon atoms (n is an even number of 10 or more) wherein at least the [n-6]-position is a double bond is  $\gamma$ -linoleic acid and the [n-5]-hydroxy fatty acid wherein the [n-6]-position is a single bond is 13-hydroxy-6,9-octadecadienoic acid.

54 - 81. (canceled)

82. (new) A process for producing jasmine lactone, which comprises the steps of:

- (i) causing cells or a culture of a microorganism having an activity to convert  $\alpha$ -linolenic acid to 13-hydroxy-9,15-octadecadienoic acid and belonging to the genus *Pediococcus* or *Bifidobacterium*, or a treated matter thereof, to act on  $\alpha$ -linolenic acid or a composition containing  $\alpha$ -linolenic acid to form 13-hydroxy-9,15-octadecadienoic acid; and
- (ii) causing cells or a culture of a microorganism having an activity to beta oxidize 13-hydroxy-9,15-octadecadienoic acid and belonging to the genus *Kluyveromyces*, *Zygosaccharomyces*, *Pichia*, *Saccharomyces*, or a treated matter thereof, to act on the formed 13-hydroxy-9, 15-octadecadienoic acid to form jasmine lactone; and
- (iii) recovering the formed jasmine lactone.

83. (new) The process according to claim 82, wherein the microorganism in step (i) is *Pediococcus pentosaceus* or *Bifidobacterium bifidum*.

84. (new) The process according to claim 82, wherein the microorganism in step (i) is *Pediococcus pentosaceus* IFO3891 or *Bifidobacterium bifidum* JCM7002.

85. (new) The process according to claim 82, wherein the microorganism in step (ii) is *Kluyveromyces marxianus*, *Kluyveromyces thermotolerans*, *Kluyveromyces wickerhamii*, *Zygosaccharomyces rouxii*, *Zygosaccharomyces bailli*, *Zygosaccharomyces cidri*, *Pichia jadinii* or *Saccharomyces cerevisiae*,

86. (new) The process according to claim 82, wherein the microorganism in step (ii) is *Kluyveromyces marxianus* IFO1090, *Kluyveromyces thermotolerans* ATCC24177, *Kluyveromyces wickerhamii* ATCC24178, *Zygosaccharomyces rouxii* NFR2007, *Zygosaccharomyces bailli* ATCC8766, *Zygosaccharomyces cidri* ATCC46819, *Pichia jadinii* IFO0987 or *Saccharomyces cerevisiae* Kyokai No. 701.